Soc. 97:172–197). The observed third-instar larva of *Cargida pyrrha* was found clinging to a rock in the middle of a steep, eroded jeep trail, apparently having been disloged or washed there from its host by torrential rains that recently had ended. Attempts to locate feeding larvae of *C. pyrrha* in the area were futile, so no additional specimens or hostplant information were gathered.

Gratitude is owed the Servicio de Parques Nacionales de Costa Rica for permission to work at Santa Rosa National Park. D. E. Dockter assisted with the scanning electron microscopy. Financial support came from the University of Illinois Research Board, Herbert Holdsworth Ross Memorial Fund and Illinois Agricultural Experiment Station Project 12-361 (Biosystematics Insects).

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Received for publication 26 December 1989; revised and accepted 21 February 1990.

Journal of the Lepidopterists' Society
44(2), 1990, 94–95

DIETARY BREADTH IN *EUPHYDRYAS GILLETTII* (NYMPHALIDAE)

Additional key words: *Lonicera, Pedicularis, Valeriana, Veronica,* hostplants.

Ever since J. A. Comstock (1940, Bull. S. Calif. Acad. Sci. 39:111–113) reported its hostplant to be *Lonicera involucrata* (Rich.) Banks (Caprifoliaceae), *Euphydryas gillettii* (Barnes) has been thought to be monophagous. My observations over the past decade, however, have revealed oviposition by *E. gillettii* on several additional plant species. Here I report these observations, along with an evaluation of dietary breadth of this butterfly in light of hostplant choice in other *Euphydryas*.

These reports are based on observed oviposition or discovery of egg masses on the plants, not simply on larval feeding; thus, they differ from other reported hostplant records for *E. gillettii*, such as those in J. A. Scott (1986, The butterflies of North America, Stanford Univ. Press, 583 pp.), which include records of feeding by wandering post-diapause larvae. Although the following new hostplants differ in growth form (shrub or perennial), all are in families that possess iridoid glycosides (M. D. Bowers, pers. comm.). These compounds are sequestered, producing unpalatability (Bowers, M. D. 1981, Evolution 35:367–375; Gardner, D. R. & F. R. Stermitz 1988, J. Chem. Ecol. 14:2147–2168), and also may function as feeding and ovipositional stimulants. The additional records are the following. E. H. Williams and M. D. Bowers (1987, Am. Midl. Nat. 118:153–161) reported infrequent oviposition (1–4% of all egg masses) in a Wyoming population on *Valeriana occidentalis* Heller (Valerianaceae). A field survey of *E. gillettii* populations (Williams, E. H. 1988, J. Lepid. Soc. 42:37–45) revealed extensive use in an Idaho population of *Pedicularis groenlandica* Retz. (Scrophulariaceae) and *Lonicera caerulea* L., in addition to *L. involucrata*. Furthermore, an alpine population of *E. gillettii* oviposits on *Veronica wormskjoldii* Roem. & Schult. (Scrophulariaceae) (letter, C. F. Gillette, 14 Feb 1985).

Feeding experiments have shown that larvae survive and grow well on the additional hostplants. Williams and Bowers (*op. cit.*) found no significant difference in survivorship and growth of larvae on *V. occidentalis* and the usual host *L. involucrata*. Similar experiments showed no difference among *L. involucrata*, *L. caerulea*, and *P. groenlandica* as hostplants for larvae from the population that uses all three (Table 1). The use of alternative hostplants is therefore not simply ovipositional error.

Although individual populations are locally specialized, all other *Euphydryas* species whose basic ecology is known, including Eurasian as well as North American species, oviposit on several plant species each. The *minimum* number of plant genera (species)

TABLE 1. Growth of *E. gillettii* larvae from a single population on alternative hostplants. Second instar larvae were raised on each of the 3 possible hostplants, with 9 replicates per plant and 5 larvae per replicate, for 6 days. Methods follow those of Williams and Bowers (*op. cit.*). Analysis by one-factor ANOVA.

Hostplant	*Lonicera involucrata*	*Lonicera caerulea*	*Pedicularis groenlandica*	F	P
Survivorship (%)	97.8	93.3	97.8	0.615	>0.50
Relative consumption rate (mg food/[mg larva·day])	1.81	1.67	1.94	0.429	>0.50
Relative growth rate (mg larva/[mg larva·day])	0.104	0.106	0.094	0.248	>0.50

used by each *Euphydryas* species is as follows (references: Higgins, L. G. 1950, Trans. Roy. Ent. Soc. Lond. 101:435–499; Higgins, L. G. & N. D. Riley 1970, A field guide to the butterflies of Britain and Europe; White, R. R. & M. C. Singer 1974, J. Lepid. Soc. 28:103–107; Howe, W. H. 1975, The butterflies of North America): *E. anicia* (Doubleday)—2(5), *E. aurinia* Rottemburg—7(7), *E. chalcedona* (Doubleday)—4(7), *E. colon* (Edwards)—1(3), *E. cynthia* Schiffermuller—2(2), *E. desfontainii* Godart—3(3), *E. editha* (Boisduval)—5(13), *E. maturna* L.—3(3), and *E. phaeton* (Drury)—3(3). Other Eurasian species appear too little known to evaluate their dietary breadth.

I suggest that *E. gillettii* is like other members of its genus in hostplant choice; more than one plant species is a potential host, but host specificity and host rank order (Singer, M. C. 1982, Oecologia 52:224–229) vary among species and among populations within a single species. In spite of its past reputation, *E. gillettii* is oligophagous, though it may have greater host specificity than most other *Euphydryas* (i.e., a larger gap in preference between the first and second host choices). As a result, there are populations, though infrequent, in which plant species other than *L. involucrata* are used. I expect that additional hostplants will be reported for *E. gillettii* as more populations are studied. The above evidence also provides support for Singer's (*op. cit.*) model of hostplant preference.

Meredith Lane kindly identified *Lonicera caerulea* and deposited voucher specimens at the Rocky Mountain Herbarium, University of Wyoming. Deane Bowers made helpful comments on a draft of the manuscript.

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Received for publication 12 June 1989; revised and accepted 27 February 1990.

Journal of the Lepidopterists' Society
44(2), 1990, 95–96

NATURAL INTERGENERIC MATING IN LYCAENIDAE

Additional key words: *Fixsenia favonius*, *Calycopis cecrops*, Florida.

Documented natural matings between distantly related species of butterflies are rare. Most published reports of intergeneric and interfamilial matings involve species of Lycaenidae and Nymphalidae (e.g., Downey, J. C. 1962, J. Lepid. Soc. 16:235–237; Frechin, D. 1969, J. Lepid. Soc. 23:115; Jae, R. J. 1972, J. Lepid. Soc. 26:28; Arnold, R. A. 1986,